

REMARKS

Prior to entry of the instant amendment, claims 1-19 are pending in the application.

Claims 1, 12 and 15 are independent. By the instant amendment, claims 1, 12 and 15 are amended, and claims 5, 14 and 18 are cancelled.

A. Introduction

In the outstanding Office Action Made Final:

1. claims 12-14, 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over “*Mapping Acupuncture Points Using Multi Channel Device*” by Kwok et al. (“the Kwok et al. reference”) in view of U.S. Patent No. 6,014,583 to Nakagawara et al. (“the Nakagawara et al. reference”);
2. claims 1, 2, 4, 5, 7-11, 15, 16 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al. and Nakagawara et al. references, and further in view of U.S. Patent Application Publication No. 2002/0062090 to Chai et al. (“the Chai et al. reference”);
3. claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al., Nakagawara et al. and Chai et al. references, and further in view of U.S. Patent No. 4,517,983 to Toyosu et al. (“the Toyosu et al. reference”); and
4. claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al., Nakagawara et al. and Chai et al. references, and further in view of “*The Design and Fabrication of a Micro-Thermal/Pressure-Sensor for Medical Electro-Skin Application*,” by Ho (“the Ho reference”).

In response to the Office Action Made Final, applicants filed an Amendment After Final on March 17, 2009. In response, the Examiner issued an Advisory Action on April 7, 2009, in which the Examiner indicated that the March 17th amendment was not entered. The Advisory Action also included, *inter alia*, remarks regarding the patentability of claims 1 and 12 with respect to the teachings of the Kwok et al. reference, which are discussed in detail below.

It is noted that amendments to the claims in the instant amendment are not the same as those presented in the March 17th amendment.

B. Asserted Obviousness Rejection of Claims 12-14, 17 and 18

In the outstanding Office Action Made Final, claims 12-14, 17 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al. reference in view of the

Nakagawara et al. reference. By the instant amendment, independent claim 12 is amended to recite subject matter similar to that recited in claims 5 and claim 14. Claims 14 and 18 are cancelled. It is respectfully submitted that the combination of the Kwok et al. and Nakagawara et al. references fails to disclose or suggest each and every element of the rejected claims. Therefore, this rejection is respectfully traversed for at least the following reasons.

Claim 12 presently recites, *inter alia*, “wherein: in (b), a different pressure is applied to each of the measurement sensors depending on a curvature of the region to be measured during measurement of skin impedance.” It is respectfully submitted that the subject matter recited in claim 12 is not disclosed or suggested by the Kwok et al. and Nakagawara et al. references, whether the references are considered alone or in combination.

Regarding the subject matter presently recited in claim 12, the instant application states,

FIGS. 2 and 3 illustrate an end view and a side view, respectively, of the multi-channel electrode 110 according to an embodiment of the present invention. Referring to FIGS. 2 and 3, the plurality of measurement sensors in the multi-channel electrode 110 are implemented by leeno pins having a height of about 1 mm and are arranged at regular intervals on the electrode surface at an end of a cylindrical probe rod having a diameter of about 10 mm. The leeno pins are measurement sensors manufactured by Leeno Industrial Inc. These pins have excellent tension due to a spring and are made of a metal conductor so as to be suitable for automation.

During a local skin impedance measurement, pressure applied to each of the measurement sensors of the multichannel electrode 110 can be uniformly controlled, or can be controlled to be different for each measurement sensor, depending on the curvature of a measured body part.

(Paragraphs [0030]-[0031] of the pre-grant publication, U.S. 2004/0092839 A1 (emphasis added)).

Thus, the instant application describes an implementation that uses a uniform pressure, and also describes, as presently recited in claim 12, an implementation that applies a

different pressure, where the pressure that is applied depends on the curvature of the measured body part. In the example noted above in paragraph [0030] of the application, the different pressure may be provided by using Leeno pins, which are pins having springs to provide pressure thereto. A person of ordinary skill in the art would appreciate that the force provided by a spring is generally represented by the Hooke's law formula $F = -kx$, which states that the force F applied by the spring is linearly proportional (by constant k) to the displacement x from the spring's equilibrium length.¹ Accordingly, a different pressure is applied to each of the measurement sensors depending on a curvature of the region to be measured during measurement of skin impedance, as presently recited in claim 12.

In contrast, the Kwok et al. reference merely teaches the use of a constant pressure, stating,

We have designed a probe that consists of 256 pins in a precise 16 x 16 square grid pattern. The probe is placed on the skin so that the pins slide freely allowing the weight of each pin to apply a constant pressure at each contact point.

(*The Kwok et al. reference, page 69, 'Method' section* (emphasis added)).

In view of this teaching, it is respectfully submitted that the Kwok et al. reference provides no disclosure or suggestion that the pressure applied at each of the measurement sensors, i.e., contact points, is different, or that the pressure may be varied or controlled depending on a curvature of the region to be measured during measurement of skin impedance. The Kwok et al. reference teaches that the pressure applied at each contact point is simply limited to that applied by the weight of each stainless steel flat-ended pin, regardless of the curvature of the region to be measured. Thus, the device described in the Kwok et al. reference is incapable of applying a different pressure to each sensor depending on a curvature of the region to be measured. Moreover, the Nakagawara et al. reference fails to remedy this deficiency.

¹ See, e.g., Wikipedia, <[http://en.wikipedia.org/wiki/Spring_\(device\)](http://en.wikipedia.org/wiki/Spring_(device))> (accessed April 15, 2009).

Further to the above, in the Advisory Action, the Examiner asserted,

. . . the pressure applied to each of the measurement sensors is adjusted in the Kwok et al. reference. Each measurement sensor moves independently of the others, so each measurement sensor is adjusted. Regarding the curvature of the region, each measurement sensor initially exhibits no pressure (before application of the sensor), and then the pressure is adjusted to the weight of the measurement sensor divided by the area the sensor is exposed to, which is based on the curvature of the region measured. Further, Kwok et al. show their sensor being used on a curved surface (Figure 3). Additionally, the Examiner notes that Applicant has not claimed that a different pressure is applied, only that the pressure is adjusted, which could be an adjustment to make all the pressures equal.

(Advisory Action mailed April 7, 2009, Continuation Sheet).

Regarding these assertions, it is noted that the Examiner concedes that the pressure applied by each measurement sensor in the Kwok et al. reference is merely that of the weight of the measurement sensor. Such a design provides uniform pressure regardless of displacement, rather than a different pressure being applied to each of the measurement sensors depending on a curvature of the region to be measured during measurement of skin impedance, as presently recited in claim 12.

In the Advisory Action, the Examiner also stated,

Additionally, the Examiner notes that it is unclear how Applicant's control their different measurement sensors such that they are different depending on the curvature of a measured body part.

(Id.).

In response, applicants note that such control may be provided by, e.g., springs that are displaced by curvature of the measured body part, as discussed above.

In view of the above, it is respectfully submitted that the asserted combination of the Kwok et al. and Nakagawara et al. references fails to disclose or suggest each and every element of claim 12. Accordingly, claim 12, and remaining claims 13 and 17 depending therefrom, are allowable over the Kwok et al. and Nakagawara et al. references. Therefore, it is respectfully requested that this rejection be favorably reconsidered and withdrawn.

C. Asserted Obviousness Rejection of Claims 1, 2, 4, 5, 7-11, 15, 16 and 19

In the outstanding Office Action Made Final, claims 1, 2, 4, 5, 7-11, 15, 16 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al. reference and Nakagawara et al. references, and further in view of the Chai et al. reference. By the instant amendment, independent claims 1 and 15 are amended in similar fashion to claim 12. Claim 5 is cancelled. It is respectfully submitted that the combination of the Kwok et al., Nakagawara et al. and Chai et al. references fails to disclose or suggest each and every element of the rejected claims. Therefore, this rejection is respectfully traversed for at least the following reasons.

Claims 1 and 15 presently recite, *inter alia*, the language of claim 12 discussed above in section B. It is respectfully submitted that the Kwok et al. and Nakagawara et al. references fail to disclose or suggest this subject matter, as discussed above in section B regarding claim 12. Moreover, it is respectfully submitted that the Chai et al. reference fails to cure the deficiencies in the teachings of the Kwok et al. and Nakagawara et al. references. Accordingly, claims 1 and 15 are allowable over the asserted combination of references.

In view of the above, it is respectfully submitted that the asserted combination of the Kwok et al., Nakagawara et al. and Chai et al. references fails to disclose or suggest each and every element of independent claims 1 and 15. Accordingly, it is respectfully submitted that claims 1 and 15, and remaining claims 2, 4, 7-11, 16 and 19 depending therefrom, are allowable over the Kwok et al., Nakagawara et al. and Chai et al. references. Therefore, it is respectfully requested that this rejection be favorably reconsidered and withdrawn.

D. Asserted Obviousness Rejection of Claim 3

In the outstanding Office Action Made Final, claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al., Nakagawara et al. and Chai et al. references, and further in view the Toyosu et al. reference. Claim 3 depends from claim 1. It is respectfully submitted that the Toyosu et al. reference fails to cure the deficiencies in the

teachings of the Kwok et al., Nakagawara et al. and Chai et al. references with respect to the subject matter presently recited in claim 1. Accordingly, claim 1, as well as claim 3 depending therefrom, are allowable over the asserted combination of references. Therefore, it is respectfully requested that this rejection be favorably reconsidered and withdrawn.

E. Asserted Obviousness Rejection of Claim 6

In the outstanding Office Action Made Final, claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kwok et al., Nakagawara et al. and Chai et al. references, and further in view of the Ho reference. Claim 6 depends from claim 1. It is respectfully submitted that the Ho reference fails to cure the deficiencies in the teachings of the Kwok et al., Nakagawara et al. and Chai et al. references with respect to the subject matter presently recited in claim 1. Accordingly, claim 1, as well as claim 6 depending therefrom, are allowable over the asserted combination of references.

In the Advisory Action, the Examiner asserted, “the MEMS sensor of Ho measures electrical activity; as such, it is appropriate for use measuring electrical activity.”² Applicants respectfully disagree. The sensor described in the Ho reference does not measure electrical activity. Rather, it senses (a) temperature and (b) pressure, and outputs an electrical signal. Neither the Ho reference nor any of the other prior art references provide any teaching as to how such a sensor may be made to respond to electrical stimuli, rather than temperature and pressure stimuli.

In view of the above, applicants respectfully maintain that a person of ordinary skill in the art would appreciate that the sensor described in the Ho reference would be inappropriate for use as an electrode in the context of the teachings of the Kwok et al., Nakagawara et al. and Chai et al. references because it would fundamentally alter the signals being measured. Thus, the Ho reference cannot be combined with the Kwok et al., Nakagawara et al. and Chai

² Advisory Action mailed April 7, 2009, Continuation Sheet.

et al. references in the manner asserted in the Office Action Made Final. Therefore, it is respectfully requested that this rejection be favorably reconsidered and withdrawn.

F. Interview Request

The instant amendment is filed concurrently with a RCE. Applicants respectfully request, prior to the issuance of an action on the merits, that the Examiner grant a personal interview with applicants' representative in order to discuss the differences between the cited prior art and the subject matter recited in the claims.

Tentative participants would be:

- For Applicants: Jay P. Beale, Reg. No. 50,901.
- For PTO: Examiner Emily M. Lloyd
- and -
Supervisory Examiner Max Hindenburg.

Issues/Claims to be Discussed:

- The outstanding rejections of claims 1, 6, 12, and 15, as set forth in the Office Action Made Final mailed November 17, 2008, and relevant remarks in the Advisory Action mailed April 7, 2009. It is not anticipated that an exhibit will be shown or demonstrated.

Applicants' representative will telephone the Examiner within the next two weeks in an attempt to schedule this personal interview. However, as applicants' representative cannot anticipate when this application will be scheduled for further action by the Examiner, it is requested that the Examiner contact applicants' representative by telephone, at the number given below, should a specific date for the interview not have been scheduled when the Examiner takes up this application for further action. Every effort will be made to meet the Examiner's scheduling preference.

G. Conclusion

The above remarks demonstrate the failings of the outstanding rejections, and are sufficient to overcome them. However, while these remarks may refer to particular claim elements, they are not intended to, nor need they, comprehensively address each and every reason for the patentability of the claimed subject matter over the applied art. Accordingly, it

is respectfully submitted that the claims are allowable for reasons including, but not limited to, those set forth above, and patentability of the claims does not depend solely on the particular claim elements discussed above.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

LEE & MORSE, P.C.

Date: April 15, 2009



Jay P. Beale, Reg. No. 50,901

Attachment: Petition for Extension of Time (second month)

LEE & MORSE, P.C.
3141 FAIRVIEW PARK DRIVE, SUITE 500
FALLS CHURCH, VA 22042
703.207.0008 TEL
703.207.0003 FAX

PETITION and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.